ABSTRACT OF THE DISCLOSURE

The present invention entails a method of removing ammonia from a gas stream. The method entails irradiating the gas stream with light in the spectral range of 200 - 350 nanometers and disassociating hydrogen free radicals from ammonia to form NH_2. Once NH_2 is formed, then reacting the NH_2 with NO_x to form N_2 and water. In one specific embodiment of the present invention, the method entails removing ammonia from a gas stream associated with a cement producing process. In particular, a raw feed is directed into a pyroprocessing system of a cement manufacturing facility. This raw feed is heated and in the process of producing cement, a gas stream results. Ammonia present in the gas stream is removed or substantially reduced by irradiating the gas stream and disassociating hydrogen free radicals from the ammonia to form NH_2. NH_2 is then reacted with NO_x to form water.